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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,836	08/11/2001	Toshifumi Tsujino	SOHMEI.NIPPONSHEETGLASS.P	8270

7590

02/24/2004

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EXAMINER

BLACKWELL RUDASIL, GWENDOLYN A

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,836

Applicant(s)

TSUJINO ET AL.

Examiner

Gwendolyn A. Blackwell-Rudasill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 26 is/are rejected.
- 7) ☒ Claim(s) 4-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/11/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group 1, claims 1-26 in the Response to the Restriction Requirement dated 4 December 2003 is acknowledged. The traversal is on the ground(s) that examination of the entire application would not pose a serious burden to the Examiner.

This argument has been considered, but not found persuasive. MPEP § 808.02 recites that for the purposes of the initial requirement of a restriction, a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation either separate classification, separate status in the art, or a different field of search as defined in MPEP § 808.02. Since the Examiner has shown a different classification for the two groups of claims, a burden for examining both groups has been shown.

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan on 26 January 2000. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 26 recites the limitation "said glass base substrate" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Examiner's Comments

5. In claim 26, lines 3-4, the phrase "total light transmittance of 85% or greater" is taken to apply to the total light transmittance of the soda lime silicate glass only.
6. In claim 26, line 4, the term "soda lime silicate glass" is being held analogous to "soda glass sheet" as used by Taniguchi et al.
7. In claim 26, lines 8-10, the phrase "total light transmittance equivalent to or higher than the total light transmittance of said glass base substrate" is taken to mean that the glass substrate plus the low reflection film has an equivalent or higher total light transmittance than the glass substrate alone.

Claim Objections

8. Claims 4-25 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 4,374, 158 Taniguchi et al.

Regarding claims 1-3

Taniguchi et al disclose a shaped article having an anti-reflective layer formed thereon, wherein the anti-reflective layer is formed of fine particles dispersed in a coating solution. The particles have an average particle size of about 1-300 nm (1-300 nm), (column 2, lines 20-33). Silicon oxide is used for the fine particles, (column 3, lines 34-41).

Taniguchi et al also disclose that the coating solution is comprised of a volatile dispersion medium of water, hydrocarbons, or alcohol either used alone or as a mixture of two or more media. The particles are present in the dispersion in an amount ranging from 5-80 wt%, (column 4, lines 4-22). Alkoxides of aluminum, titanium, and zirconium as well as solvents and additives are also present in the coating solution, which is coated on a glass substrate, (column 6, lines 40-60).

11. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Application Publication no. 11-292568, JP '568.

Regarding claims 1-3

JP '568 disclose a glass substrate coated with an anti-reflective film comprised of chain silica fine particles and a smaller amount of silica that acts as a binder and is present in the amount ranging from 5-30 wt%, (page 2, sections 0009-0011). The average diameter of the particles ranges from 10-20 nm with an average length of 60-200 nm, (page 2, section 0013).

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JP '568 also disclose that the coating solution is comprised of silica particles and at least one silicon compound that is hydrolysable, such as a silicon alkoxide, a solvent, and water, (pages 4-5, sections 0020-0029).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 4,374,158, Taniguchi et al.

Taniguchi et al disclose a shaped article having an anti-reflective layer formed thereon, wherein the anti-reflective layer is formed of fine particles dispersed in a coating solution. The particles have an average particle size of about 1-300 mmu (1-300 nm), (column 2, lines 20-33). Silicon oxide is used for the fine particles, (column 3, lines 34-41). The layer has a thickness of

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up to 500 mmu (500 nm), (column 7, lines 50-52). The coating solution is comprised of a volatile dispersion medium of water, hydrocarbons, or alcohol either used alone or as a mixture of two or more media. The particles are present in the dispersion in an amount ranging from 5-80 wt%, (column 4, lines 4-22). Alkoxides of aluminum, titanium, and zirconium as well as solvents and additives are also present in the coating solution, which is coated on a glass substrate, (column 6, lines 40-60).

A soda glass sheet is used in Example 29, wherein the total transmittance of the uncoated glass sheet was 91.6%. After coating, the total transmittance of the glass sheet was 97.8%, (columns 21-22, lines 65-30). Table 1, (column 17), further demonstrates that coatings made according to the disclosed invention increase the total transmittance of the substrate over the total transmittance of the substrate alone. Taniguchi et al do not show specific examples of the soda glass sheet with the silica fine particles and binder proportions as claimed by Applicant.

It would have been obvious to one skilled in the art at the time of invention based upon the teachings of Taniguchi et al to create a soda lime silicate glass coated substrate wherein the total transmittance of the glass substrate is increased by the application of an anti-reflective film in order to increase the light transmittance and more effectively utilize rays of light, (column 1, lines 8-18).

The limitation, (lines 1-2), that the glass article is "a solar cell or solar water heater" is intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Because the anti-reflective film of Taniguchi et al has the

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compositional limitations of the film as claimed by Applicant as well as increasing the total light transmittance of a coated glass substrate versus an uncoated glass substrate, there is no patentable distinction over the prior art of record.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

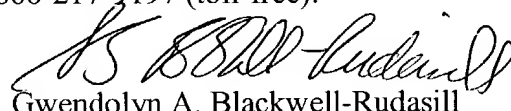
United States Patent nos. 5,139,980; 4,830,879; 5,612,128; 5,925,438; 5,976,236 and European Patent Application Publication 0 926 103, disclose inventions related to anti-reflective films utilizing hydrolysable metal compounds as part of the coatings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gwendolyn A. Blackwell-Rudasill

Examiner

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